

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 73.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-006638**Date Inspected:** 06-May-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 800**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1800**Contractor:** HoChang, Korea**Location:** Unyang/Changwon, Korea**CWI Name:** Sang Ho, Kwak**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Pier E2 bearing and Shear key**Summary of Items Observed:**

The following report is based on METS observations at HoChang Machinery Industries (HCMI). Current work: Casting, forging and machining.

On this date the Caltrans Quality Assurance (QA) inspector, Dong J. Shin arrived at HoChang Machinery Industries (HCMI) located at Unyang, Korea and DooSan Heavy Industries (DHIC) located at Changwon, Korea. The Purpose of this trip was to observe quality control during fabrication and process of following items.

**Forging**

1. Bearing Bottom Housing (B1-07/F07302-010): Waiting for final NDT.
2. Bearing Bottom Housing (B2-07/F07302-020): Waiting for final NDT.
3. Bearing Bottom Housing (B3-07/F07302-030): Waiting for final NDT.
4. Bearing Bottom Housing (B4-07/F07302-040): Completed Quenching and tempering.
5. Spherical Ring (S1-07/F07302-050): Waiting for final NDT.
6. Spherical Ring (S2-07/F07302-060): Waiting for final NDT.
7. Spherical Ring (S3-07/F07302-070): Waiting for final NDT.
8. Spherical Ring (S4-07/F07302-080): Waiting for final NDT.
9. Solid Shaft (B1-02/F07302-090): Waiting for final NDT.
10. Solid Shaft (B2-02/F07302-100): Waiting for final NDT.
11. Solid Shaft (B3-02/F07302-110): Completed Quenching and tempering.
12. Solid Shaft (B4-02/F07302-120): Completed Quenching and tempering.

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# WELDING INSPECTION REPORT

( Continued Page 2 of 3 )

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- F number is DooSan Production Number.
- B number is drawing Number.

## Casting

On this date DHIC has started repair welding on castings, QA inspector, HMIC QC Inspector and DHIC QC inspector has checked welding parameters prior start repair welding. DHIC used listed qualified welder Mr. DJ Kang, Mr. G. S. Kim, and Mr. J. H. Kim. Welding process utilized Gas Shielded Flux Core Arc Welding (FCAW-G) with E81T1-K2, 1.6mm diameter Manufacture by SEAH-ESAB, Brand name Dual shield 1181-K2. QA inspector checked welding parameters 23-26 volts, 210-250 amps, travel speed 13-16 cm/min, Gas flow 10-25l/min, preheat temperature over 100°C and 24 hours maintaining preheat temperature. All of welding parameters were found to comply with approved welding procedure specification A-F-Z1Z1-219.

1. Bearing Top Housing (B1-06, C07039-010): Completed defect removal and initial NDT.
2. Bearing Top Housing (B2-06, C07039-020): Completed defect removal and initial NDT.
3. Bearing Top Housing (B3-06, C07039-030): Continue repair welding.
4. Bearing Top Housing (B4-06, C07039-040): Completed defect removal and initial NDT.
5. Bearing Hold Down Assembly (B1-01-1, C07039-050): Start repair welding.
6. Bearing Hold Down Assembly (B1-01-2, C07039-060): Completed defect removal and initial NDT.
7. Bearing Hold Down Assembly (B2-01-1, C07039-070): Start repair welding.
8. Bearing Hold Down Assembly (B2-01-2, C07039-080): Start repair welding.
9. Bearing Hold Down Assembly (B3-01-1, C07039-170): Start repair welding.
10. Bearing Hold Down Assembly (B3-01-2, C07039-180): Completed defect removal and initial NDT.
11. Bearing Hold Down Assembly (B4-01-1, C07039-190): Completed defect removal and initial NDT.
12. Bearing Hold Down Assembly (B4-01-2, C07039-200): Completed defect removal and initial NDT.
13. Shear Key Stub (S1-01, C07039-090): Continue repair welding.
14. Shear Key Stub (S2-01, C07039-100): Start repair welding.
15. Shear Key Stub (S3-01, C07039-110): Completed defect removal and initial NDT.
16. Shear Key Stub (S4-01, C07039-120): Completed defect removal and initial NDT.
17. Shear key Housing (S1-03, C07039-130): Completed defect removal and initial NDT.
18. Shear key Housing (S2-03, C07039-130): Completed defect removal and initial NDT.
19. Shear key Housing (S3-03, C07039-130): Continue to remove out defects.
20. Shear key Housing (S4-03, C07039-130): Continue to remove out defects.

- \* S and B number is drawing number.
- \* C number is DSHI ID number.

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## WELDING INSPECTION REPORT

( Continued Page 3 of 3 )

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### Summary of Conversations:

\*Discuss with Mr. S.H. Kwak regarding general project schedule.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy, (510) 385-5910, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Shin,DJ	Quality Assurance Inspector
<b>Reviewed By:</b>	Lanz,Joe	QA Reviewer

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